



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,855	03/12/2004	Hisashi Amaya	12054-0024	6672
22902	7590	07/13/2006	EXAMINER	
CLARK & BRODY 1090 VERMONT AVENUE, NW SUITE 250 WASHINGTON, DC 20005			ALEXANDER, MICHAEL P	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/798,855	Applicant(s) AMAYA ET AL.	
	Examiner Michael P. Alexander	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim(s) 1-12 is/are pending.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 June 2006 has been entered.

Claim Objections

Claims 3-8 and 11-12 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Regarding claims 3-8 and 11-12, claim 1 uses the term "consisting of" which excludes any elements not recited in the claim 1, and therefore excludes Ti, V, Nb, B, Ca, Mg and rare earths. These exclusions are eliminated in claims 3-8 and 11-12. Therefore, claims 3-8 and 11-12 expand rather than limit the subject matter of claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 1742

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lena (US 2,799,602).

Regarding claims 1-2 and 9-10, Lena teaches (col. 2 lines 50-72) a martensitic stainless steel having in mass percent: up to about 0.15% C; up to 0.5% Si; up to 0.04% P; up to 0.04% S; 12 to 18% Cr; 3.5 to 7.0% Ni; 0.05 to 0.15% N; up to 0.25% Cu; 2.0 to 3.5% Mo; the residual being Fe and impurities, which overlaps with the claimed amounts of each of the respective elements, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amounts of each of the respective elements from the range disclosed by Lena because Lena teaches the same utility throughout the disclosed ranges. Furthermore, Lena does not necessitate the introduction of any aluminum nor any other elements.

With respect to the claimed formula of $0.55\% < \text{Mo} + \text{Cu}/4 < 5\%$ in claims 1-2 and 9-10, the Examiner asserts that Lena clearly envisions compositions satisfying this

Art Unit: 1742

formula because Lena teaches compositions having Mo from 2.0 to 3.5% and Cu up to 0.25%.

With respect to the hardness of 30-45 HRC in claims 1-2 and 9-10, Lena teaches (col. 2 lines 50-72) that hardness is a function of composition. Since hardness is a result effective variable as taught by Lena, it would have been obvious to one of ordinary skill in the art to select the desired hardness by optimizing the composition as a routine optimization as taught by Lena. See MPEP 2144.05 II.

With respect to the limitation that the amount of carbides in grain boundaries of the prior austenite is not more than 0.5 volume % in claims 1-2 and 9-10, Lena teaches (col. 11 lines 43-48) that the alloy of Lena would not have any metal carbide in the grain boundaries.

Claims 3-8 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lena as applied to claims 1-2 above, and further in view of the Metallographer's Guide.

Regarding claims 3-4 and 11-12, Lena does not specify that the alloy would contain 0.005-0.5% Ti, 0.005-0.5% V or 0.005-0.5% Nb. However, the Metallographer's Guide teaches (page 3) that titanium, vanadium and/or niobium are added to increase strength and hardness by grain-size control. Since the amount of titanium, vanadium or niobium is a result effective variable as taught by the Metallographer's Guide, it would have been obvious to one of ordinary skill in the art to modify the alloy of Lena by adding the desired amounts of Ti, V or Nb in order to increase strength and hardness by grain-size control as taught by the Metallographer's Guide.

Art Unit: 1742

Regarding claims 5-8, Lena does not specify that the alloy would contain B or Ca. However, the Metallographer's Guide teaches (page 3) that B is added to increase hardenability and that Ca is added to for sulfide shape control. Since the amount of B or Ca are result effective variables as taught by the Metallographer's Guide, it would have been obvious to one of ordinary skill in the art to modify the method of Lena by adding the desired amounts of B or Ca in order to increase hardenability or for sulfide shape control as taught by the Metallographer's Guide.

Double Patenting

Applicant is advised that should claim 11 be found allowable, claim 12 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Response to Arguments

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Alexander whose telephone number is 571-272-8558. The examiner can normally be reached on M-F 8:30-4:30.

Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mpa

mpa

ROY KING *R*
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700